



July 2016

Examining a Natural Gas Supply Pillar: Domestic Underground Storage



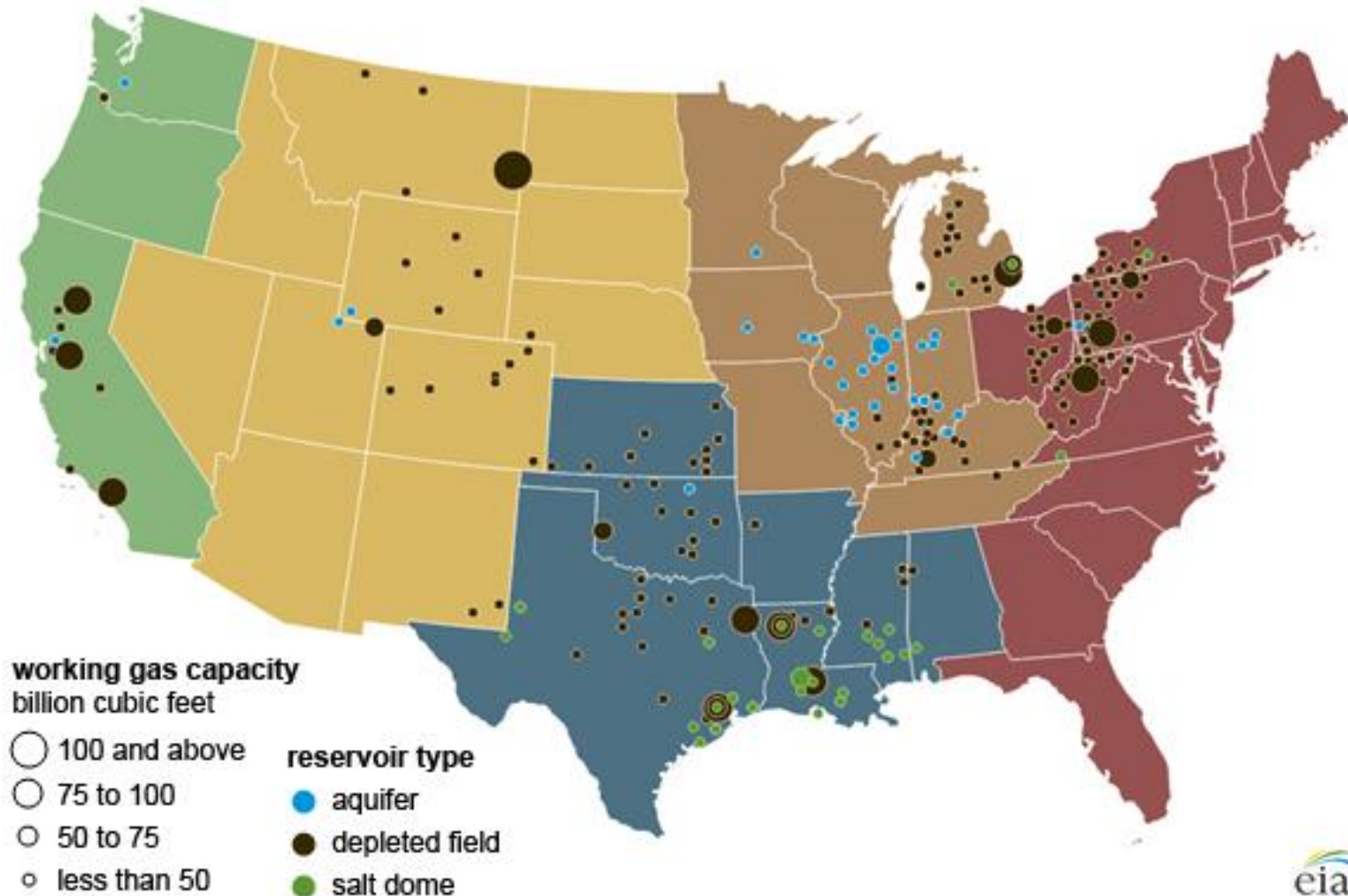
Natural Gas Records in 2015

- **Domestic Annual Production – 27.1 Tcf**
- **Proved Reserves – 368 Tcf (dry)**
- **Undiscovered Gas Resources – more than 2,500 Tcf**
- **Domestic Natural Gas Consumption – 27.4 Tcf**
- **Natural Gas Consumed for Power Gen – 9.4 Tcf**
- **Working Gas in Underground Storage – 4,009 Bcf**

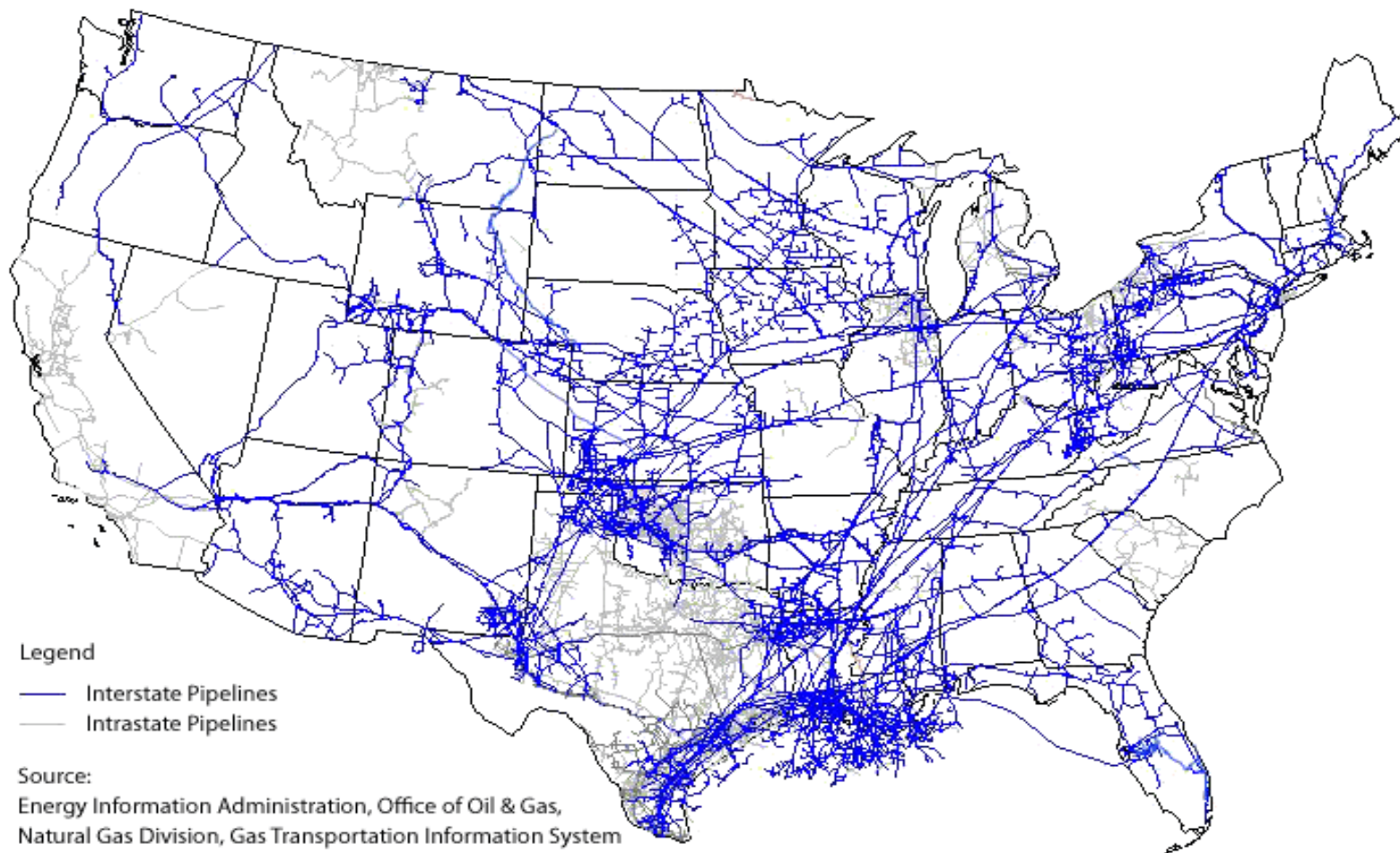
Sources: Bentek Energy, Energy Information Administration, Potential Gas Committee

New Storage Regional Classifications and Type

U.S. underground natural gas storage facilities by type (July 2015)



US Natural Gas Pipeline Infrastructure

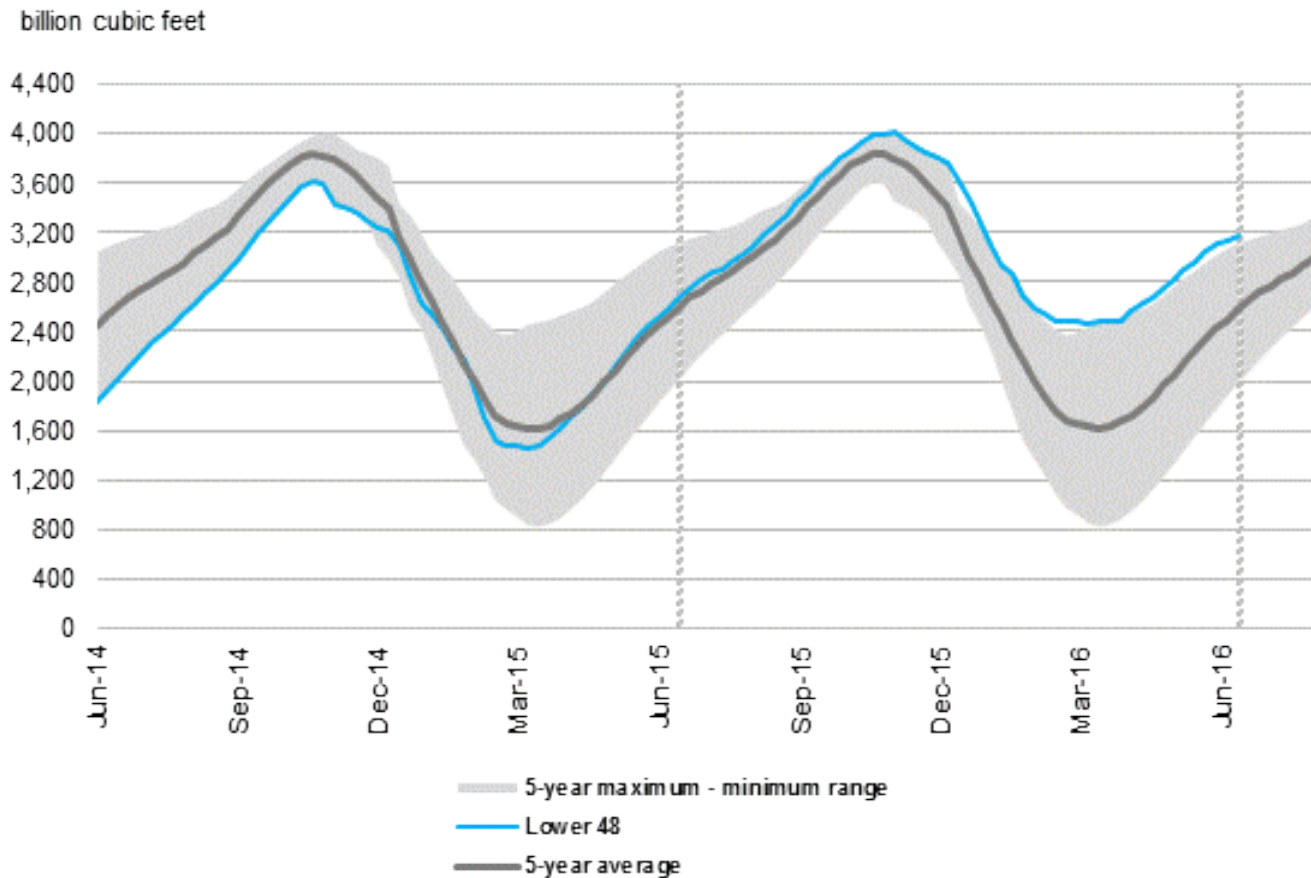


Recurring Themes for Gas Utilities Regarding Use of Underground Storage

- **Physical Reliability for Consumers of Natural Gas**
- **Hedging Mechanism within Utility Supply Portfolio**
- **Provides Flexibility and Ensures Pipeline Grid Integrity**
- **Serves Market by Meeting Peak-Day Growth and Production Increases**

US Natural Gas Underground Storage

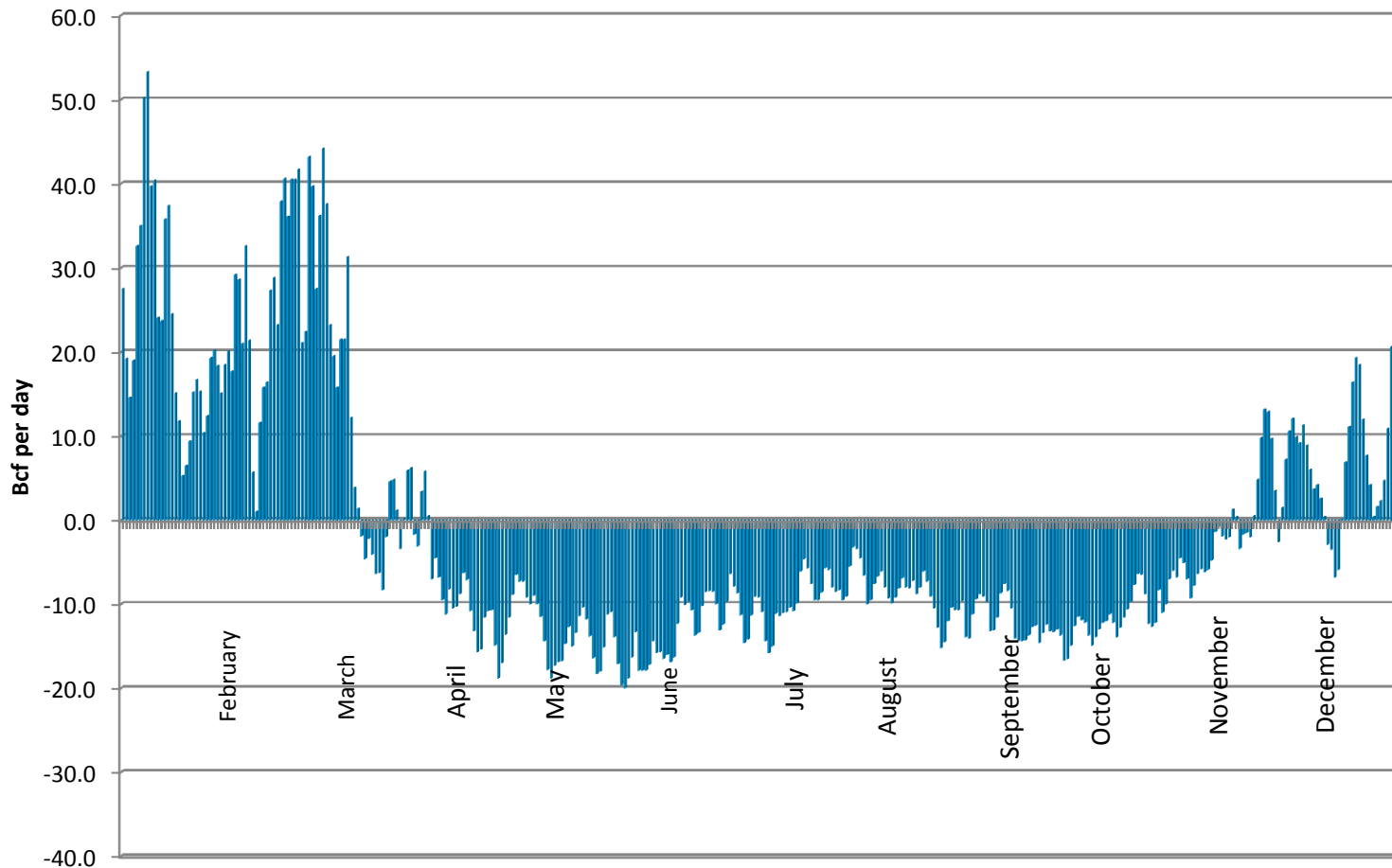
Working gas in underground storage compared with the 5-year maximum and minimum



Source: U.S. Energy Information Administration

US Natural Gas Net Underground Natural Gas Storage

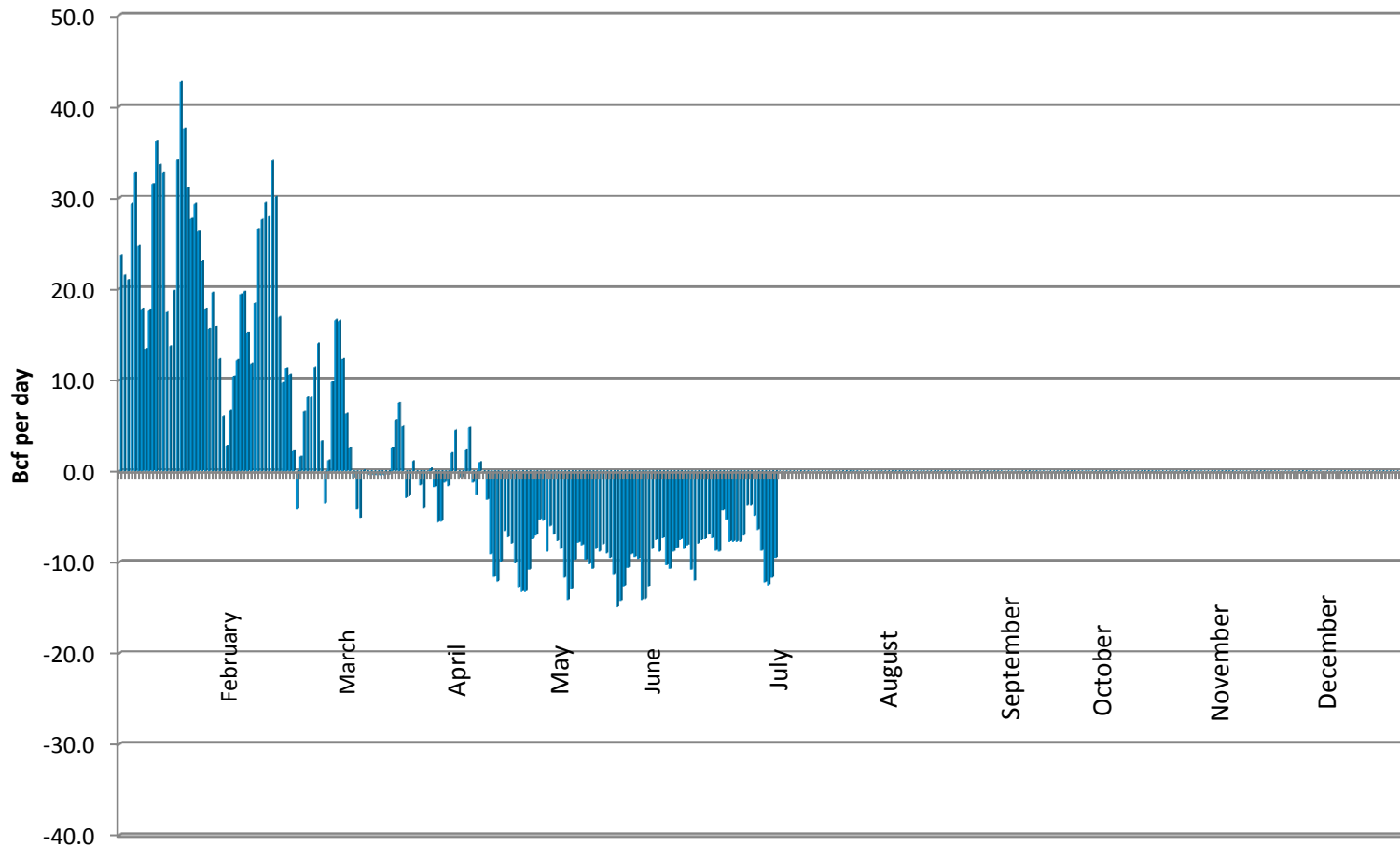
Daily Injections and Withdrawals 2015



Source: Bentek Energy.

US Natural Gas Net Underground Natural Gas Storage

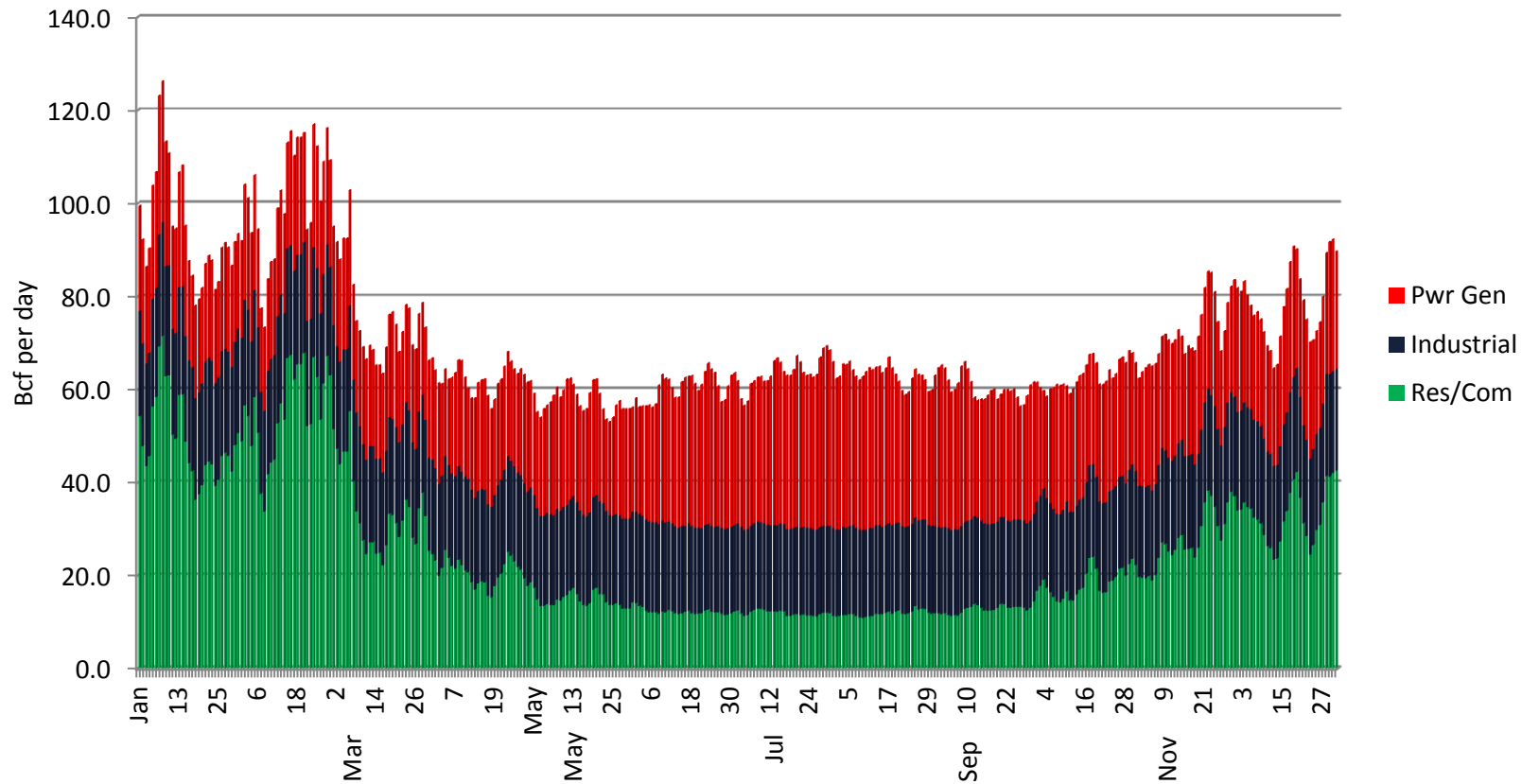
Daily Injections and Withdrawals 2016



Source: Bentek Energy.

Natural Gas Sector Consumption 2015

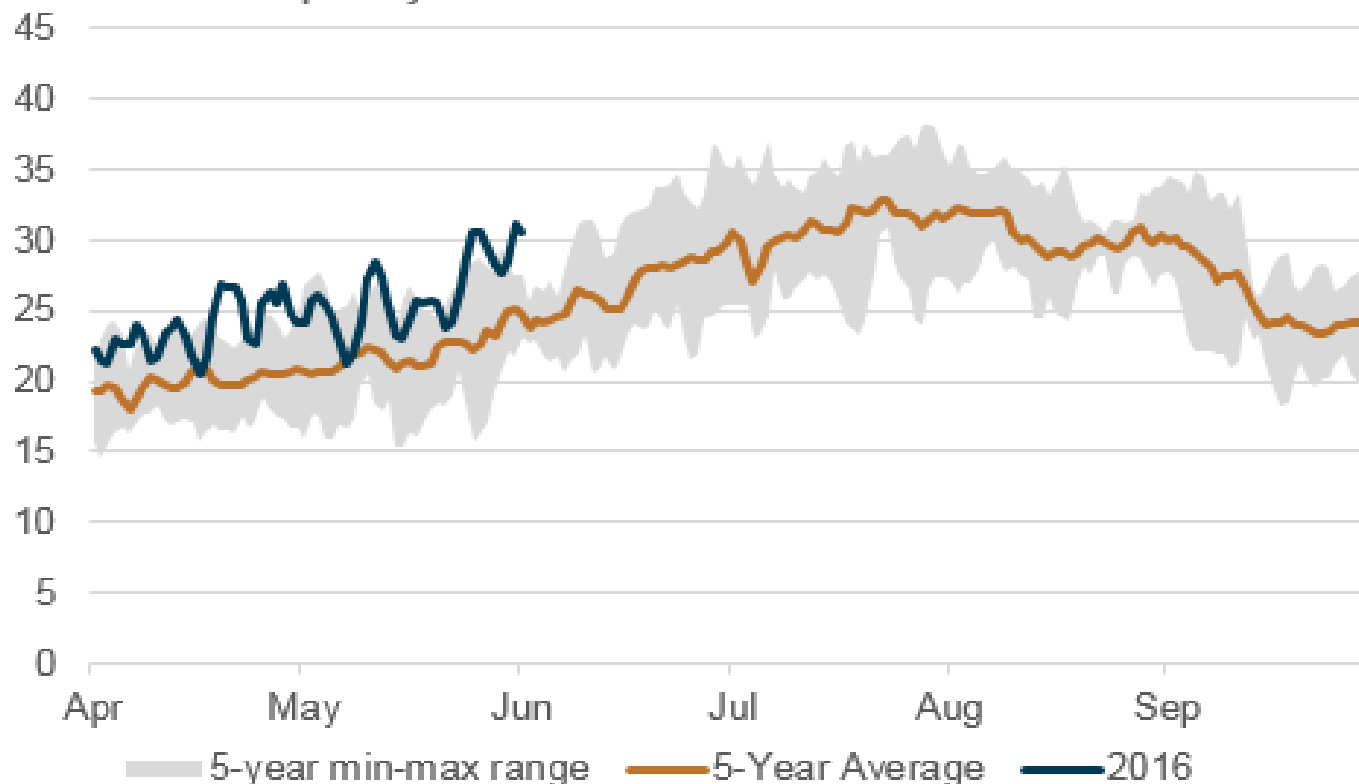
PowerGen/Industrial/Res-Com



US Natural Gas Consumed for Power Generation

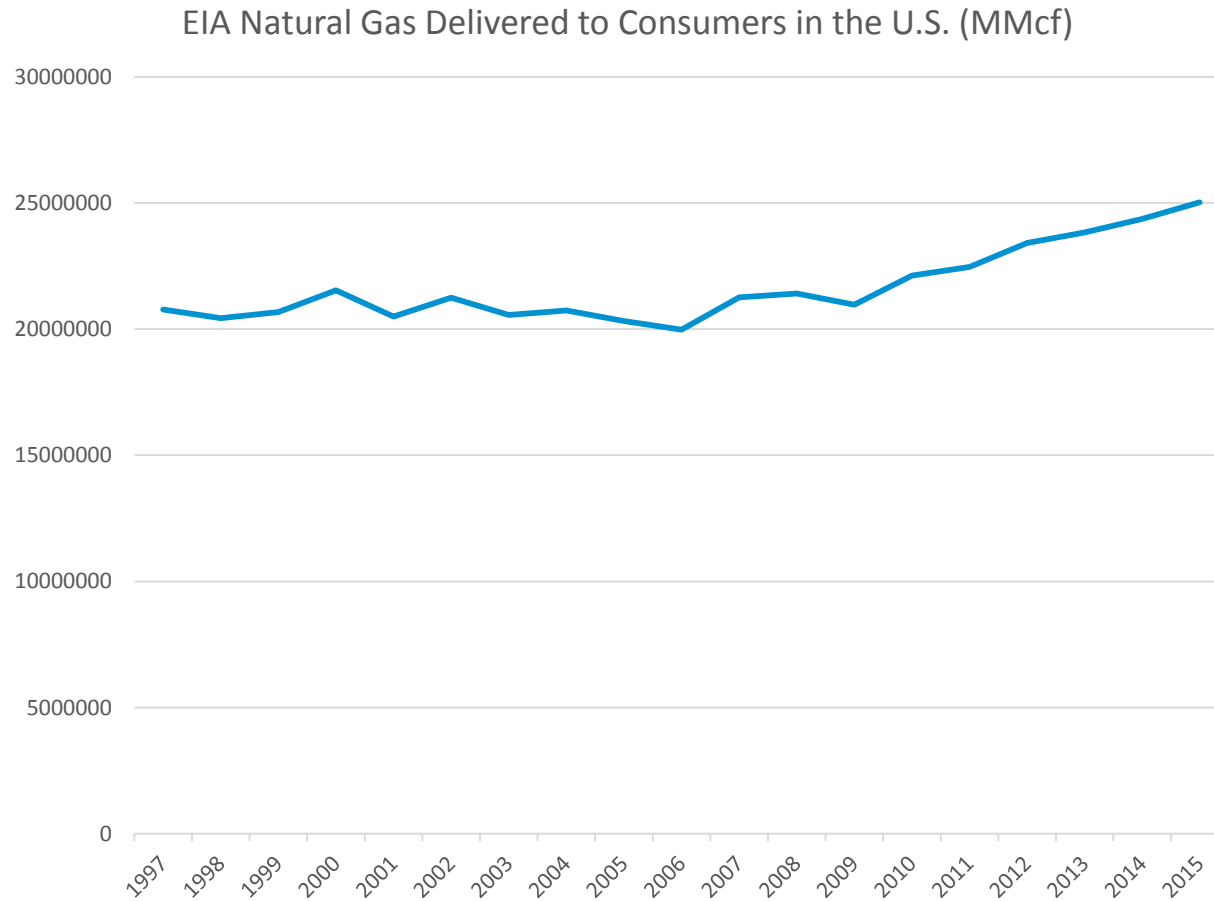
Consumption of natural gas for power generation, April – September

billion cubic feet per day



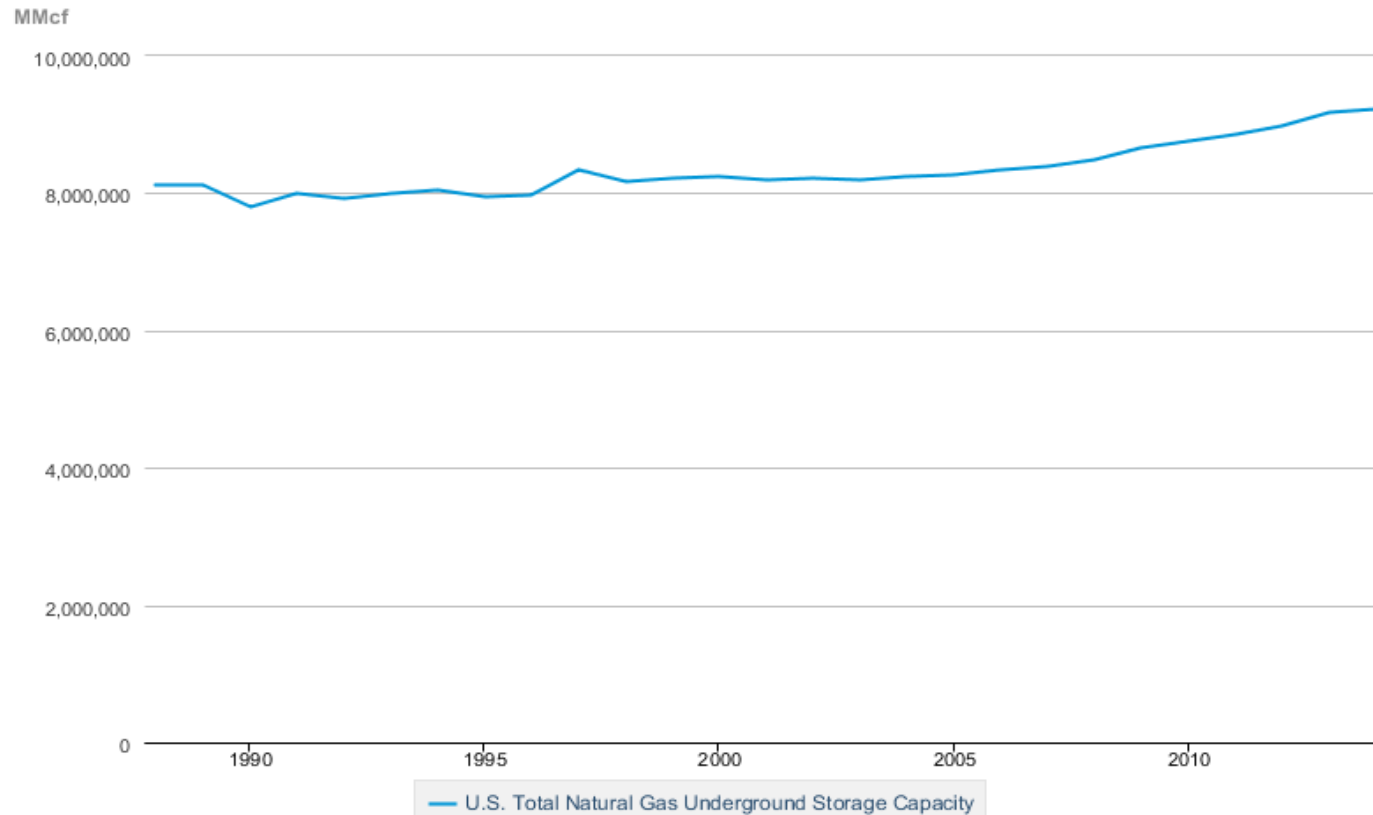
Source: OPIS PointLogic Energy, an IHS Company

Natural Gas Delivered to Consumers



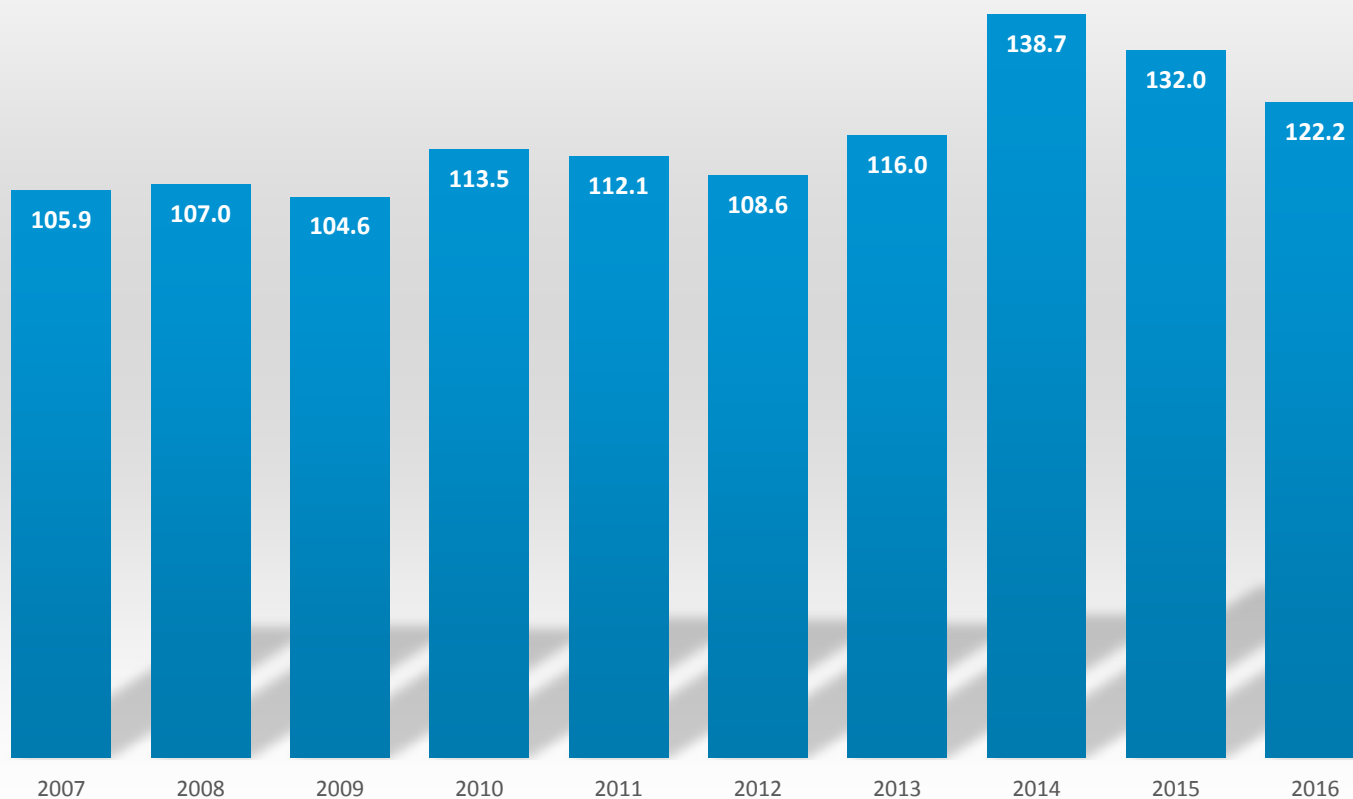
Underground Storage Capacity

Underground Natural Gas Storage Capacity



Source: U.S. Energy Information Administration

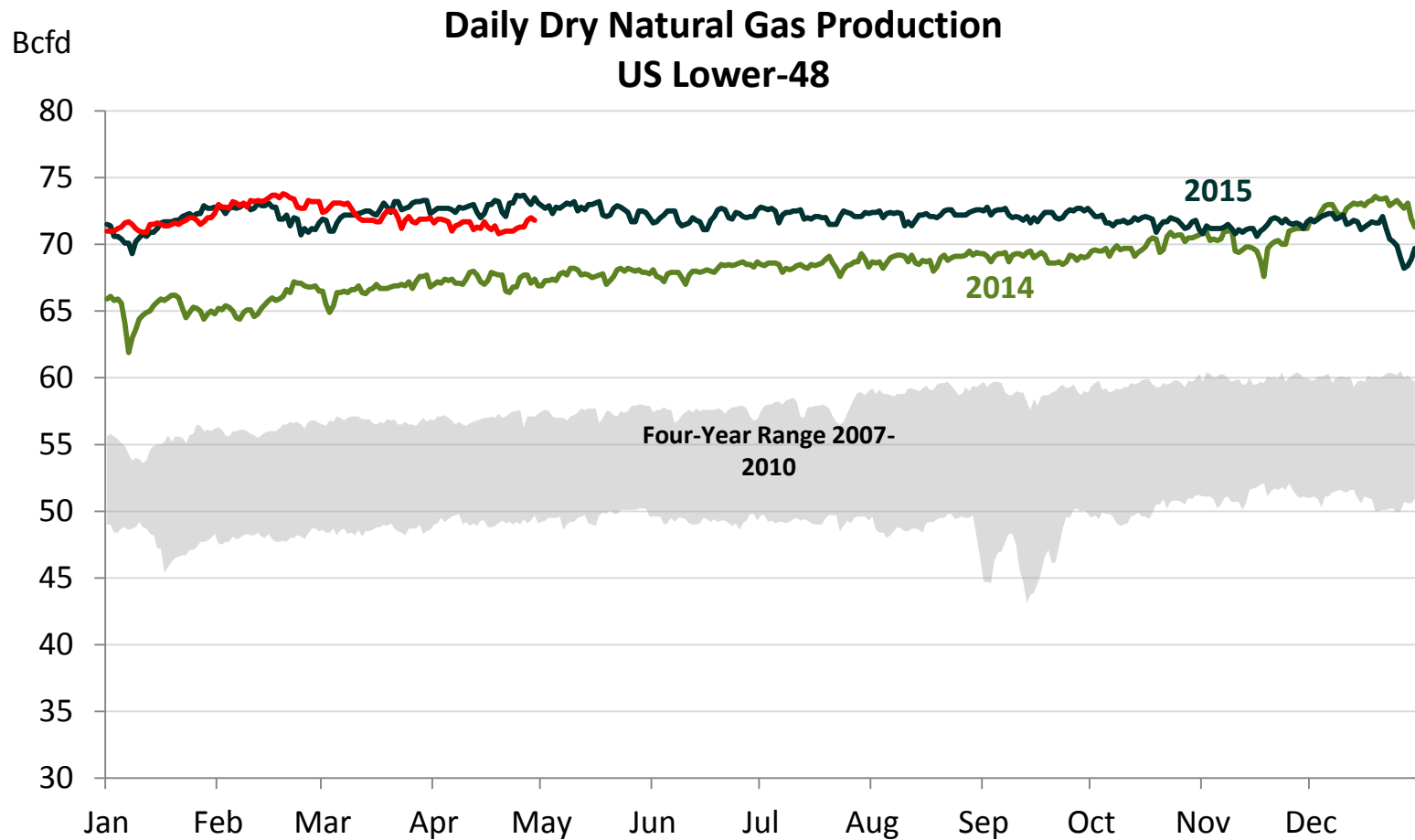
Peak Day Natural Gas Consumption 2007-2016 (Bcf/d)



Source: Bentek Energy

Record annual production in 2015

New daily records in 2016



Source: *Bentek Energy*.

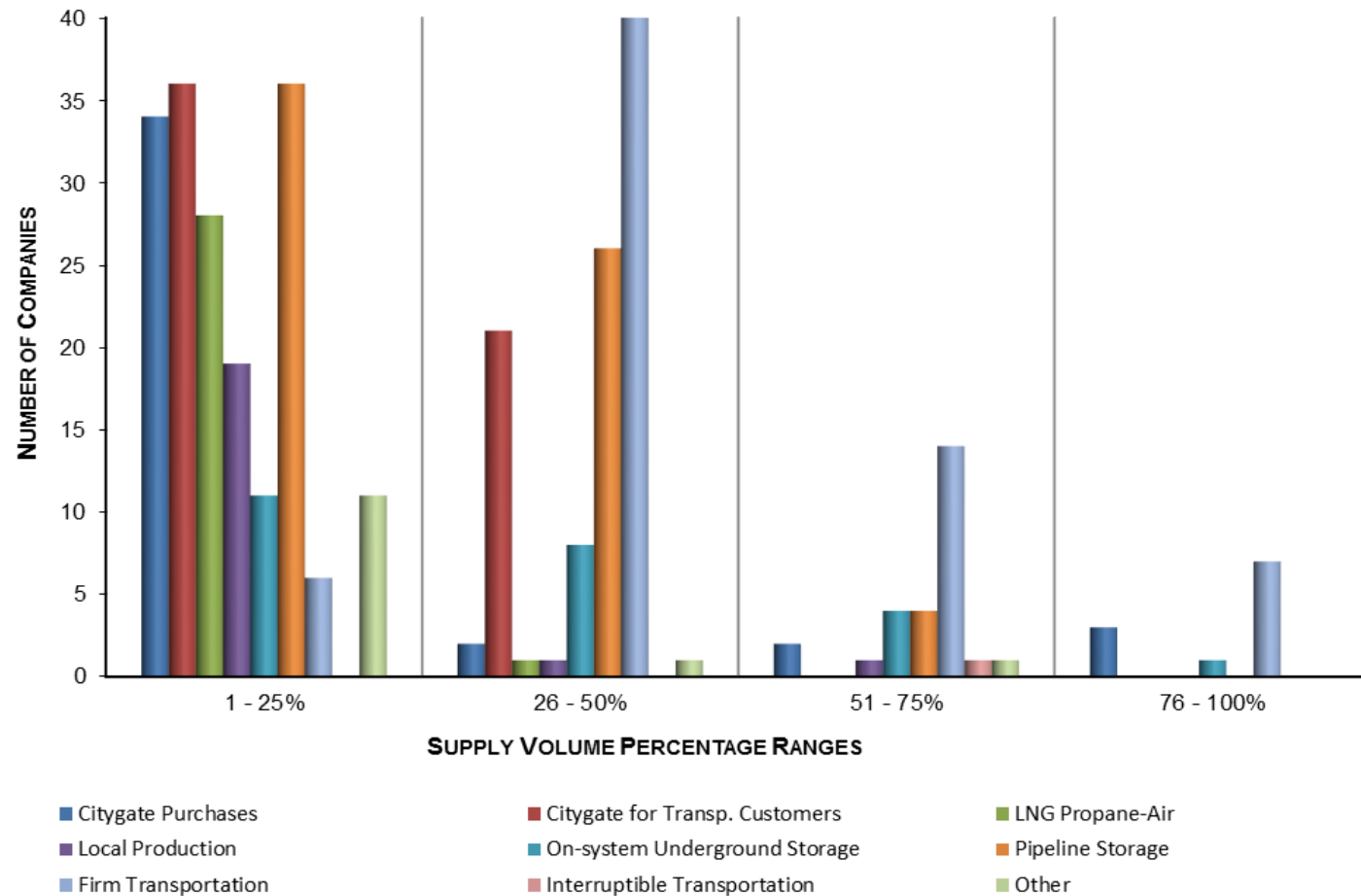
PRICING MECHANISMS FOR GAS INJECTED INTO UNDERGROUND STORAGE 2014 STORAGE REFILL SEASON (APRIL THROUGH OCTOBER)

NUMBER OF COMPANIES (75 TOTAL COMPANIES)

SUPPLY VOLUME PERCENTAGE RANGES	AVERAGE LAST 3 DAYS	DAILY (SPOT OR INDEX)	FIRST-OF-MONTH INDEX	FIXED	NYMEX	WEEKLY	OTHER
1 – 25%	1	26	7	14	10	0	0
26 – 50	1	11	19	6	2	0	0
51 – 75	0	3	13	4	5	1	0
76 – 100	0	4	25	6	3	0	1

Source: American Gas Association.

Sources of Peak-Day Gas Supplies 2014-15 Winter Heating Season (79 LDCs)

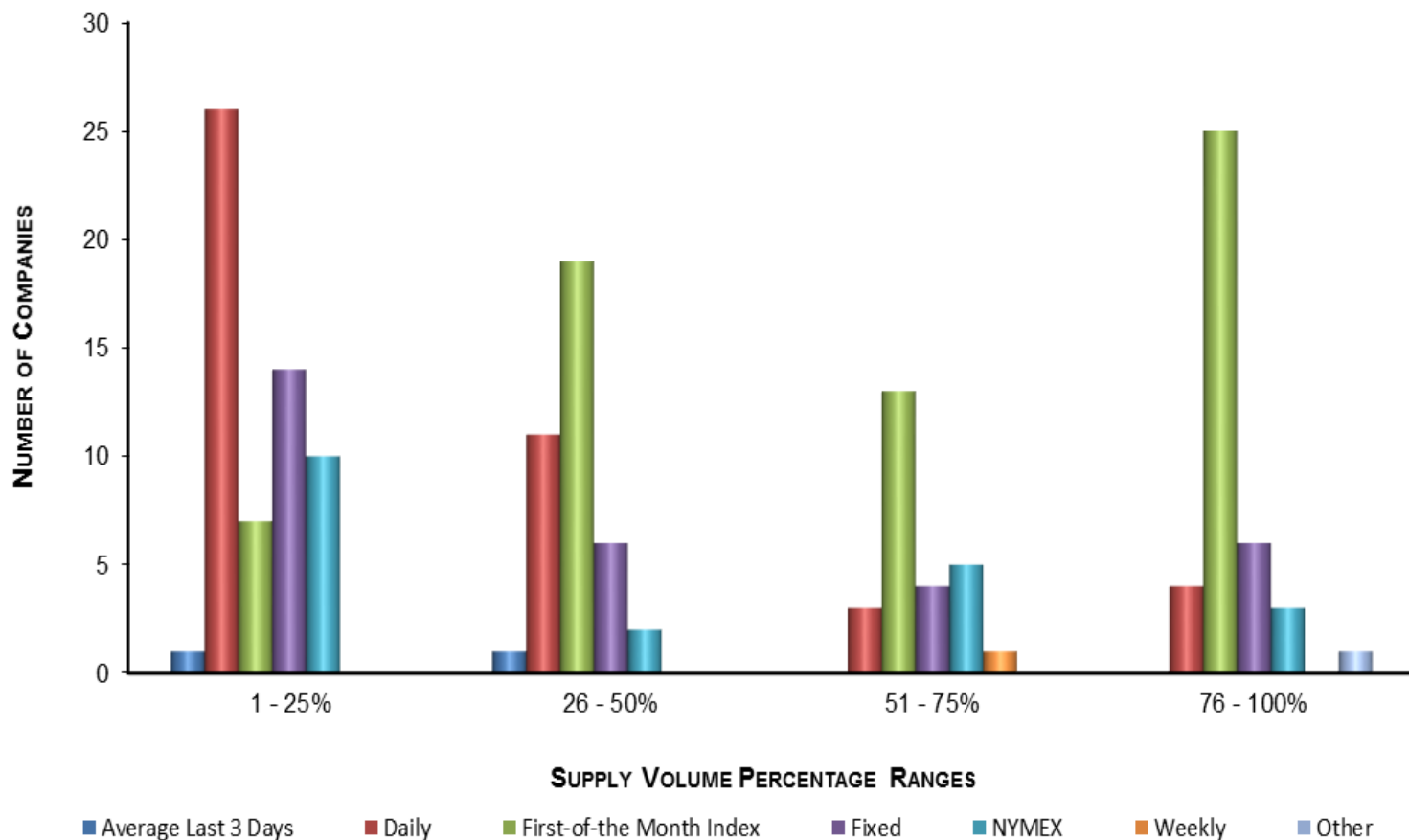


Source: American Gas Association.

LDC Gas Pricing Mechanisms for Underground Storage

2014 Storage Refill Season

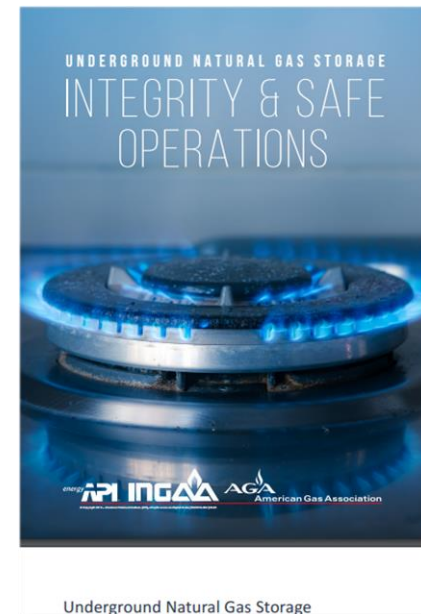
(75 LDCs)



Source: American Gas Association.

Joint Industry Task Force (JITF)

- AGA, INGAA, API
- 15 operators
- Developed 3 communication pieces providing general background information on underground storage of natural gas: <https://www.aga.org/fact-sheets/natural-gas-storage>
- Recently released technical white paper, *Underground Natural Gas Storage: Integrity & Safe Operations*:
<http://www.energyinfrastructure.org/energy-101/natural-gas-storage>



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